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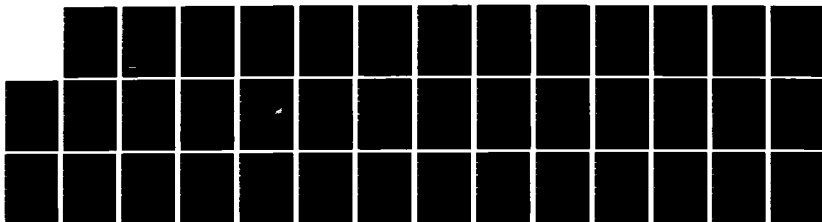
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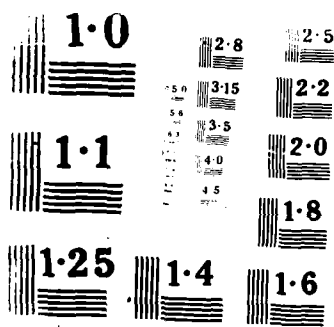
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A RAND NOTE

AD-A169 104

EXPORT CREDIT SUBSIDIES TO NICARAGUA

Donald Putnam Henry

March 1986

N-2437-USDP

Prepared for

The Office of the Under Secretary of Defense
for Policy

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM | |
|--|--|--|--|
| 1. REPORT NUMBER N-2437-USDP | 2. GOVT ACCESSION NO. AD-A169104 | 3. RECIPIENT'S CATALOG NUMBER | |
| 4. TITLE (and Subtitle) Export Credit Subsidies to Nicaragua | | 5. TYPE OF REPORT & PERIOD COVERED Interim | |
| | | 6. PERFORMING ORG. REPORT NUMBER | |
| 7. AUTHOR(s) Donald Putnam Henry | | 8. CONTRACT OR GRANT NUMBER(s) MDA903-83-C-0148 | |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS The Rand Corporation 1700 Main Street Santa Monica, CA. 90406 | | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS | |
| 11. CONTROLLING OFFICE NAME AND ADDRESS Assistant Secretary of Defense Office, Under Secretary of Defense for Policy Washington, DC 20301 | | 12. REPORT DATE March 1986 | |
| | | 13. NUMBER OF PAGES 29 | |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) | | 15. SECURITY CLASS. (of this report) Unclassified | |
| | | 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE | |
| 16. DISTRIBUTION STATEMENT (of this Report) Approved for Public Release; Distribution Unlimited | | | |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) No Restrictions | | | |
| 18. SUPPLEMENTARY NOTES | | | |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Nicaragua Exports Foreign Aid Economics | | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) See reverse side | | | |

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This study calculates the level of subsidies in officially supported export credits that have been advanced to the government of Nicaragua. U.S.-Nicaraguan relations have deteriorated steadily since 1981. U.S. actions have included various forms of aid to anti-government forces within Nicaragua, and economic sanctions, including a trade embargo. A number of Western European countries, however, continue to provide assistance to Nicaragua. These governments feel that the Nicaraguan regime is not as threatening as the United States portrays it. This Note examines one form of economic assistance to Nicaragua in detail: export credit subsidies. Because Nicaragua receives credit on favorable terms from major industrialized nations, it is able to expand its military efforts beyond levels otherwise possible. These subsidies exceed the size of nonlethal aid that the U.S. is providing the anti-government forces within Nicaragua. If European governments are alerted to the costs of providing export credits to Nicaragua, they might reduce these flows.

A RAND NOTE

EXPORT CREDIT SUBSIDIES TO NICARAGUA

Donald Putnam Henry

March 1986

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Prepared for

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Rand

WASH DC 20540
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PREFACE

This study calculates the level of subsidies in officially supported export credits that have been advanced to the Government of Nicaragua. Because Nicaragua receives credit on favorable terms from major industrialized nations, it is able to expand its military efforts beyond levels otherwise possible. Consequently, this study should interest Western policymakers who have a stake either in Nicaragua's economy or in its military, as well as those dealing with export credit subsidies in a wider context.

This work was completed within Rand's International Economic Policy Program as part of its work for the Under Secretary of Defense for Policy.

SUMMARY

Immediately after the Sandinista revolution, the United States followed a somewhat supportive, wait and see policy towards the new government of Nicaragua. Since 1981, however, U.S.-Nicaraguan relations have deteriorated steadily. The United States has four announced objectives in its dealings with the Sandinistas:¹

- A halt to Nicaragua's support for armed insurrection and subversion elsewhere in Central America
- An end to Nicaragua's military ties with Cuba and the Soviet bloc
- A reversal of Nicaragua's military buildup
- Respect for democratic pluralism and observance of full political and human rights in Nicaragua

U.S. actions to further these objectives have included various forms of aid to anti-government forces within Nicaragua and, since May 7, 1985, economic sanctions, including a trade embargo.

In contrast to U.S. actions, a number of Western European countries have continued to provide assistance to Nicaragua. In many cases, European aid to Nicaragua has been given to advance specific European objectives that differ from U.S. objectives. Many governments in Western Europe feel that the Nicaraguan regime is not as threatening as the United States portrays it. Some Western governments, while sharing U.S. objectives, believe that a more conciliatory policy will best achieve these objectives.

This Note examines one form of economic assistance to Nicaragua in detail: export credit subsidies. These subsidies have been sizable in recent years. New credits of \$102 million advanced between 1981 and the

¹Based on testimony by Langhorne Motley, Assistant Secretary of State for Inter-American Affairs, before the Subcommittees on Western Hemisphere Affairs and International Economic Policy and Trade, Foreign Affairs Committee, U.S. House of Representatives, May 7, 1985.

middle of 1984 embodied subsidies of at least \$49 million. In other words, the subsidy component on new official export credits advanced to Nicaragua is about 50 percent. By comparison, these subsidies are about 17 percent of Nicaragua's arms imports from 1979 through 1983 and exceed the size of nonlethal aid that the United States is providing the anti-government forces within Nicaragua.

Most forms of economic assistance that have been provided to Nicaragua have been provided consciously: the donors have been fully aware of the assistance and its cost. By contrast, governments providing export credits often do not recognize that subsidies are implicit in such flows. Governments aware of subsidies almost always underestimate their size. If European governments are alerted to the true costs of providing export credits to Nicaragua, they might reduce these flows, if not to further U.S. policy, perhaps because it is in their own economic interest to do so.

CONTENTS

| | |
|--|-----|
| PREFACE | iii |
| SUMMARY | v |
| FIGURES | ix |
| TABLES | xi |
| Section | |
| I. INTRODUCTION | 1 |
| II. NICARAGUA'S DEBT AND ECONOMY | 4 |
| III. SUBSIDIES IN OFFICIAL EXPORT CREDITS | 10 |
| Subsidies in General | 10 |
| Risks of Nicaraguan Loans | 12 |
| Estimating Credit Subsidies to Nicaragua | 13 |
| Calculating the Subsidies | 15 |
| IV. SUBSIDIES TO NICARAGUA | 19 |
| V. THE IMPORTANCE OF EXPORT CREDIT SUBSIDIES TO NICARAGUA | 24 |
| Appendix: CALCULATIONS | 27 |
| BIBLIOGRAPHY | 29 |

FIGURES

| | | |
|----|--|----|
| 1. | Nicaraguan debt components | 6 |
| 2. | Debt as a percent of GNP | 7 |
| 3. | Exports and imports | 8 |
| 4. | Current account and unrequited transfers | 9 |
| 5. | Subsidy on new loans advanced | 22 |
| 6. | Debt service savings per year | 23 |

TABLES

| | | |
|----|--|----|
| 1. | Guaranteed Share of Officially Supported Credits | 14 |
| 2. | OECD Consensus Rates | 14 |
| 3. | Illustration of Estimated Interest Rates: U.S. Officially Supported Credits | 16 |
| 4. | Officially Supported Lending To Nicaragua | 17 |
| 5. | Export Credit Subsidies in New Loans | 20 |
| 6. | Interest Saved on Loans Outstanding | 21 |

I. INTRODUCTION

Immediately after the Sandinista revolution, the United States followed a supportive policy towards the new government of Nicaragua. U.S. economic assistance totaled \$117.1 million from 1979 through 1981.¹ The United States also supported large multilateral aid flows to Nicaragua through the International Monetary Fund and the World Bank. Since 1981, however, U.S.-Nicaraguan relations have deteriorated steadily. The United States is now providing various forms of aid to anti-government forces within Nicaragua and, since May 7, 1985, has imposed economic sanctions on Nicaragua, including a trade embargo.

The United States has four announced objectives in its dealings with the Sandinistas:²

- A halt to Nicaragua's support for armed insurrection and subversion elsewhere in Central America
- An end to Nicaragua's military ties with Cuba and the Soviet bloc
- A reversal of Nicaragua's military buildup
- Respect for democratic pluralism and observance of full political and human rights in Nicaragua

In contrast to U.S. actions, a number of Western European countries have continued to provide significant assistance to Nicaragua. Approximately \$75.7 million in aid flowed to Nicaragua during 1983.³ In

¹Agency for International Development, *Congressional Presentations for Fiscal Years 1974, 1977, 1978, and 1981*.

²Based on testimony by Langhorne Motley, Assistant Secretary of State for Inter-American Affairs, before the Subcommittees on Western Hemisphere Affairs and International Economic Policy and Trade, Foreign Affairs Committee, U.S. House of Representatives, May 7, 1985.

³This is a rough estimate derived from the "official unrequited transfers" category in Nicaragua's balance of payments figures in *International Financial Statistics*, September 1985. The number includes only financial flows received during 1983, not commodities provided at subsidized prices.

many cases, European aid to Nicaragua has been for objectives specific to European concerns, objectives that differ from U.S. concerns. Many governments in Western Europe feel that the Nicaraguan regime is not as threatening as the United States portrays it. Some Western governments, while sharing U.S. objectives, believe that a more conciliatory policy will best achieve their goals.

France, Spain, Norway, Sweden, and the Netherlands have all provided aid to Nicaragua in recent years. The Sandinistas public support of Libya and alleged relations with the Basque separatist group E.T.A. have strained relations with France and Spain.⁴ Nonetheless, the French approved loans for \$14.6 million in June of 1984 and provided a grant of \$1,730,000 as recently as November of 1984.⁵ The Netherlands has provided \$100 million in aid to Managua since 1979, including at least \$6 million in 1985.⁶ Soviet aid flows, estimated at \$100 to \$150 million per year, have largely supplanted Western aid.⁷

This Note examines one form of economic assistance to Nicaragua in detail: export credit subsidies. Many nations provide government-supported loans to those who will buy their exports. In the United States, these loans are provided or guaranteed by the EXIM Bank, in Britain by the Export Credit Guarantee Department (ECGD), in France by the Compagnie Francaise d'Assurance pour le Commerce Exterieur (COFACE), and in Germany by Hermes Kreditversicherungs AG. Every major industrialized country has a similar organization.

Official export credits are normally provided in one of two forms: direct loans or guarantees. Direct loans are advanced by the exporter's government to importers. These loans are usually offered at better terms than those that the importer could obtain commercially: the

⁴Stephen Kinzer, "Disillusion With Nicaragua Grows in Europe," *New York Times*, November 16, 1983, page A-1.

⁵*New York Times*, "Paris To Give Managua \$1.73 Million in Aid," November 25, 1984, page A-16.

⁶Joyce Heard and Joan Kruckewitt, "How Washington's Allies are Aiding the Sandinistas," *Business Week*, July 29, 1985.

⁷Stephen Kinzer, "Soviet Help to Sandinistas: No Blank Check," *New York Times*, March 28, 1984, page A-1.

interest rate is usually low and the repayment period long when compared with private financing. Sometimes these loans are advanced at an interest rate below the lending government's cost of funds. Guarantees, by contrast, are made to exporters or financial institutions which, in turn, provide loans to foreign importers. If the importer does not repay the loan, the government repays the loan to the exporter or the financial institution. Since the exporter's government is usually a better credit risk than the importer, the terms of guaranteed loans compare favorably with those of commercial loans.

Most forms of economic assistance that have been provided to Nicaragua have been provided consciously: the donors have been fully aware of the assistance and its cost. But governments that have provided export credits probably do not recognize that subsidies are implicit in such flows or may underestimate the size of these subsidies.^a

^aSee Daniel Kohler et al., *Economic Cost and Benefits of Subsidizing Western Credits to the East*, The Rand Corporation, R-3129-USDP, July 1984.

II. NICARAGUA'S DEBT AND ECONOMY

The Nicaraguan economy is in deep trouble. The Sandinistas inherited a bad situation and have turned it into a disaster. Even if a new government somehow came to power in Nicaragua and, with complete popular backing, tried its hardest to service Nicaragua's international debts, it would be hard pressed to make amends and eat. The much more likely prospect is continual *de facto* default, a condition similar to that of Poland.

Even before the Sandinistas came to power, Nicaragua was unable to pay its debts. The Somoza government suspended principal payments in September 1978, and was in the process of rescheduling when the revolution drove Somoza from the country. At that time, Nicaragua's debt was about \$1.1 billion, or about 76 percent of GNP.¹ Since that time, Nicaragua has rescheduled its private loans three times: in 1980, 1981, and 1982. Nevertheless, Nicaragua is still chronically behind on its payments and its debt has grown to about \$3.4 billion, about 133 percent of GNP. Merchandise exports have fallen by 30 percent while imports have increased by 30 percent.² Nicaragua has been financing its growing current account deficit through increased long-term and mostly official borrowing. In 1983, for instance, Nicaragua reported a \$550 million inflow of long-term capital.³ Only \$275 million in net flows are accounted for in the *World Debt Tables*, but of this amount, \$255 million are official loans.⁴ (Of these \$255 million, only \$29 million are export credit guarantees; others are bilateral or multilateral loans unrelated to specific export sales.)

¹World Bank, *World Debt Tables*, 1983-1984 edition, second supplement, pages 28-29

²International Monetary Fund, *International Financial Statistics*, September 1985

³Ibid.

⁴World Bank, *op. cit.*

Nicaragua looks like a bad credit risk even when compared to some of the worst debtor nations in the world. Its debt to GNP ratio is the highest in the world except for Mauritania.⁵ Semiannually, *Institutional Investor Magazine* surveys middle and upper level executives in U.S. firms that conduct a substantial portion of their business overseas. These executives are asked to rate the creditworthiness, on a scale of 0 to 100, of just over 100 countries. In March 1984, Nicaragua was ranked 107th out of 109 countries. Only Uganda and North Korea received worse ratings. Nicaragua's rating was 5.3. By comparison, the United States was rated 96.0, Mexico was 36.2, Argentina was 25.0, Peru was 24.6, Romania was 18.6, and Poland was 10.2.

It is not the purpose of this Note to provide an in-depth economic or credit analysis of Nicaragua. But the size of credit subsidies depends critically on the riskiness of loans to Nicaragua. Therefore, recent developments in the Nicaraguan economy that will affect its creditworthiness are presented below graphically. Figure 1 shows the growth in Nicaragua's debt since the revolution. Figure 2 shows Nicaragua's debt as a percent of her GNP. Figure 3 shows the trend in exports and imports in Nicaragua. Finally, Figure 4 shows Nicaragua's current account balance and the part of that balance covered by unrequited transfers.

⁵ World Bank, *World Development Report*, 1985

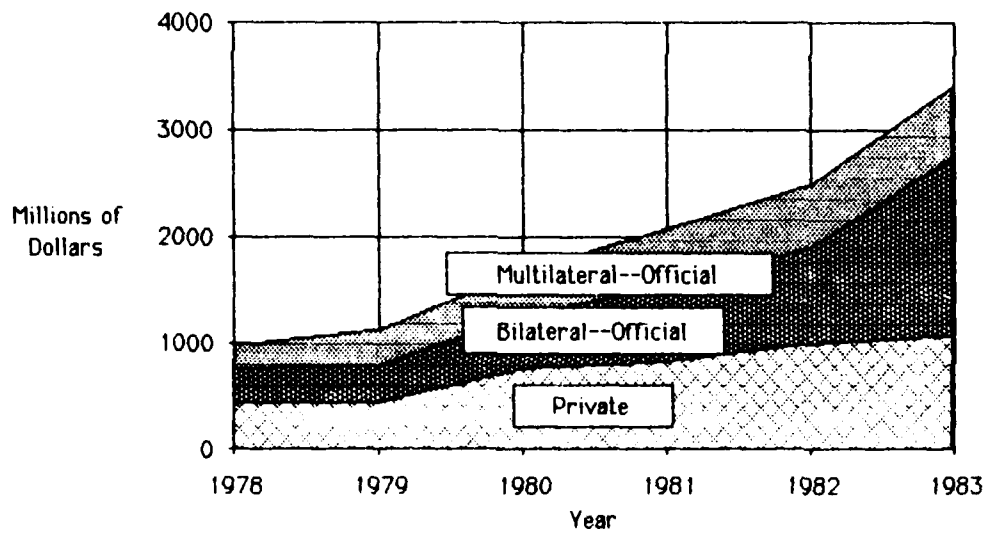
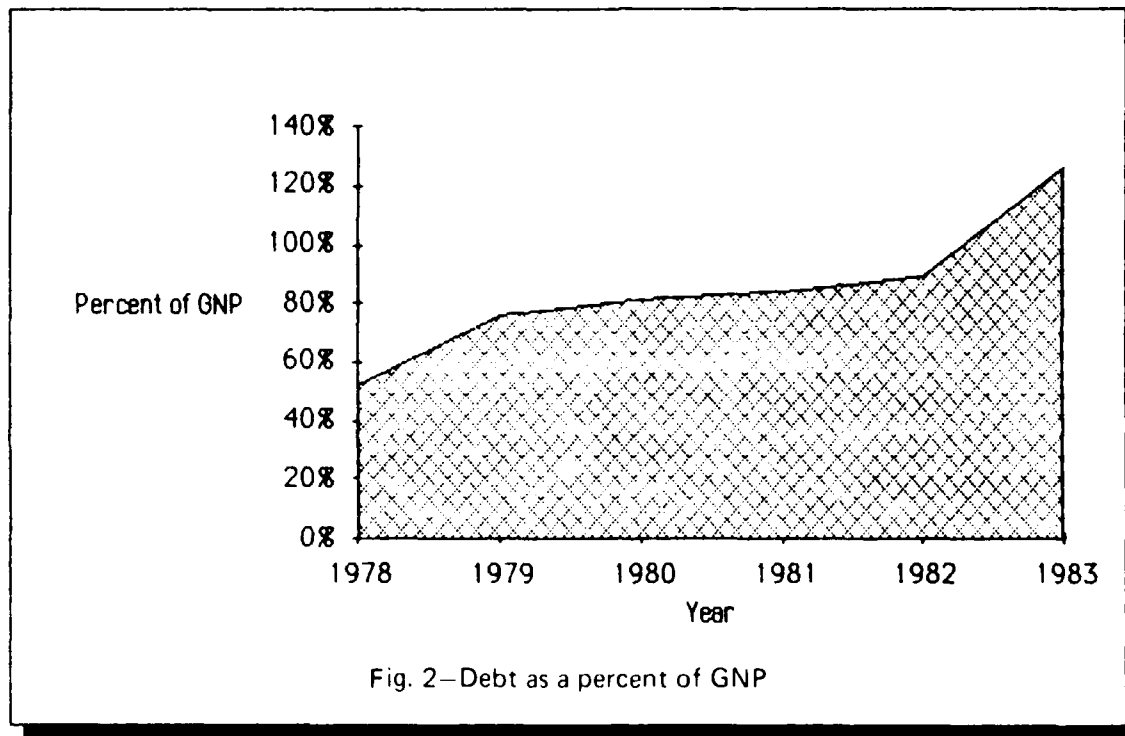
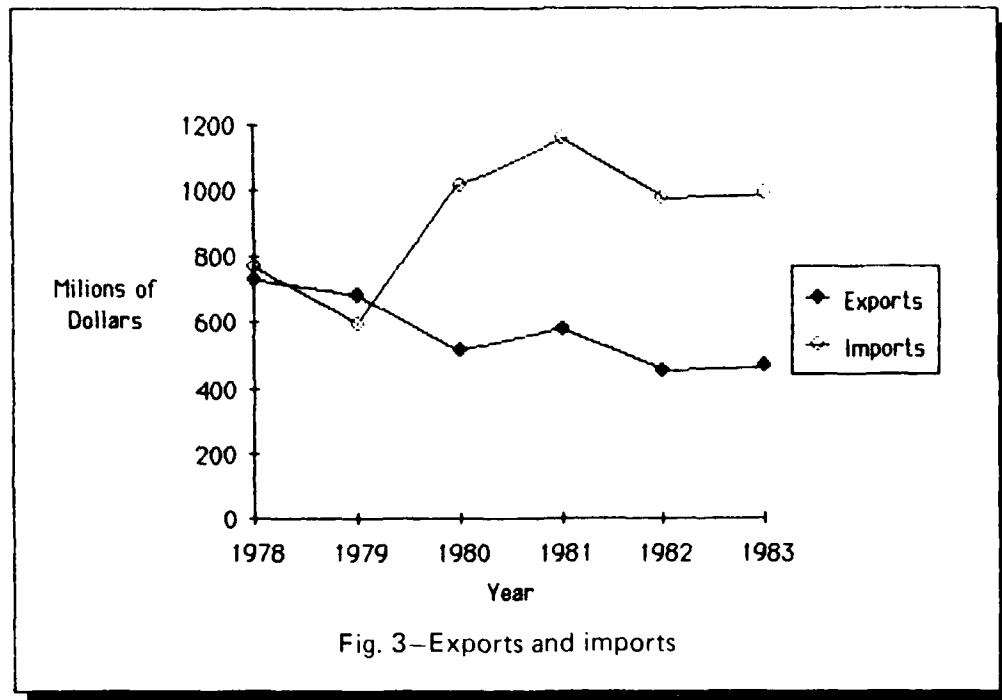
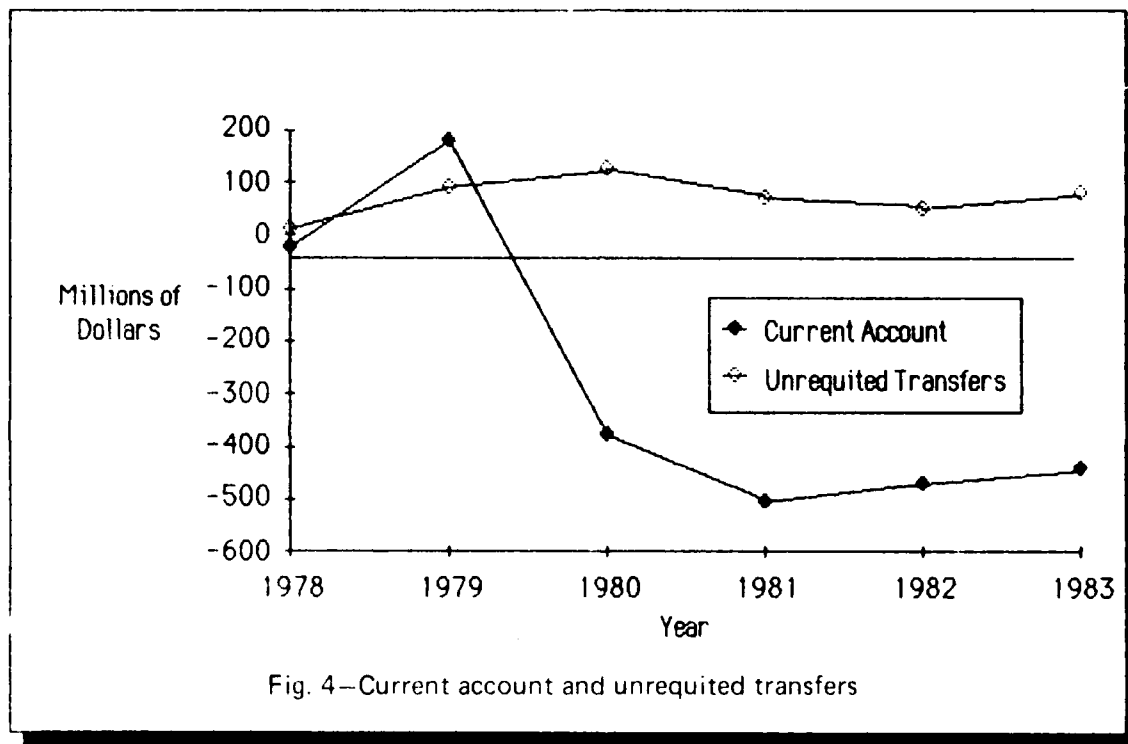


Fig. 1—Nicaraguan debt components







III. SUBSIDIES IN OFFICIAL EXPORT CREDITS

SUBSIDIES IN GENERAL

Although conceptually the same as other types of subsidies, export credit subsidies are less well understood and more difficult to quantify than more standard types of subsidies. If a government provides iron ore to a steel plant at less than the market price of the ore, one can easily calculate the subsidy as the difference between the market cost of ore and the price that the government charges. This definition will be applied to export credits: a subsidy is the difference between the loan terms provided by a government and those available on a commercial basis.¹

In an export credit transaction, money is advanced to a foreign buyer of exports. In return, the lender receives promises of future repayments from the foreign buyer. A loan transaction is subsidized if the cash advanced to the borrower is worth more than the promises of future repayments. Since it is easy to place a value on the cash advanced in a loan, the difficulty in assessing subsidies in loans lies in valuing future repayments.

There are two types of subsidies that might be present in official export lending.² The first type is a direct subsidy: the interest rate charged by the government is less than its cost of funds. For example, if a government lends out at 8 percent per year while it borrows money at 10 percent per year it funds (subsidizes) the 2 percent difference. Many official export credits are granted at less than the lender's cost of funds. Every loan advanced with direct subsidies costs the government money.

¹If a government guarantees a loan rather than advances it, the subsidy is the difference between the terms available with the guarantee and those available commercially without the guarantee.

²For a more complete discussion of subsidies in export credit financing, see Daniel Kohler et al., *Economic Cost and Benefits of Subsidizing Western Credits to the East*, The Rand Corporation, R-3129-USDP, July 1984

The second type of subsidy found in export credits is an indirect subsidy: the interest rate charged on the loan is insufficient to cover the possibility that the borrower will not repay the loan. A government might lend money at its own cost of funds to a borrower who may or may not repay the loan. If the borrower does repay the loan, the government breaks even, but if the borrower defaults, the government must absorb the loss. For any given loan that is indirectly subsidized, the government might lose nothing, but over time such lending will require government outlays (subsidies) to pay for those loans that are not repaid.

If a loan is to be provided with subsidies, it must be advanced at an interest rate high enough to cover both the cost of funds to the lender and the possibility that the loan will not be repaid. Commercial international loans are often priced in "points over LIBOR,"³ where LIBOR is the cost of funds to the lender, and the points cover the risk that the loan will not be repaid. Commercial lenders thus explicitly place a premium on the interest rates they charge to cover the riskiness of their loans. In contrast, official creditors often advance loans with no provision for riskiness. Since determining the cost of funds to a government is comparatively straightforward, any difficulty in calculating subsidies in international loans comes from quantifying the risk that a loan will not be repaid.

One promising method of measuring risks in international loans is to look at the market perception of these risks.⁴ Risks of loans to specific countries can be inferred by comparing the terms of commercial loans advanced to these countries with loans advanced to countries such as Switzerland, Germany, and the United States, where repayment risks are negligible. Even if commercial loans are not being made regularly

³LIBOR is the London Inter-Bank Offer Rate, an interest rate that large banks charge when they lend to each other. The interest on international loans is often expressed as LIBOR plus additional percentage points.

⁴This method was first proposed by Daniel Kohler and Kip Fisher, *Subsidization of East-West Trade Through Credit Insurance and Loan Guarantees*, The Rand Corporation, N-1951-USDP, January 1983.

to a country, riskiness can be measured by prices charged in secondary markets for international loans such as the forfaiting market in Europe.⁵

Using a market estimate of risk has a further advantage. If the unsubsidized interest rate is the commercial rate, then the value of the loan payments is the price at which they can be sold (or bought) in the market. Thus the loan is subsidized if cash advanced in the loan is more than the value of the repayments--the amount of money for which the promised repayments can be sold.

RISKS OF NICARAGUAN LOANS

No active secondary market could be found for Nicaraguan debt; after a certain risk threshold is reached, which Nicaragua has surpassed, banks refuse to forfeit the paper of a country. Therefore, two approaches were used to develop a synthetic risk premium--a rate that a bank would charge if it were willing to lend to Nicaragua.

Prospects for repayment on Nicaraguan loans are so poor that U.S. banks are required to set aside reserves equal to 75 percent of their loans to Nicaragua to cover expected losses.⁶ When the economic conditions in Nicaragua are closely examined, a 75 percent write-off might be too low. Nonetheless, a firm lower bound on the subsidies to Nicaragua is perhaps more valuable than a questionable guess at a precise figure. Therefore, a 50 percent write-down figure is used here. A generous bank loan might remain outstanding for five years. For such a loan, an interest rate 17.1 percent per annum above the cost of funds would cover the risks of nonpayment.⁷

⁵Unlike American Banks, European banks are allowed to discount commercial paper and give up--"forfait"--the right of recourse to the seller in case of nonpayment. For example, if an exporter sells to the Soviet Union on credit, he can take this account receivable to a bank and sell it at a discount. The bank assumes all risks. If the Soviet Union does not pay, the bank has to absorb the loss. Because such a forfaiting transaction involves the bank taking title to the obligation, it is illegal under current U.S. banking regulations. European banks use the French spelling *forfait* so that is what is used here.

⁶Testimony of H. Joseph Selby, Acting Comptroller of the Currency, before the U.S. Senate Banking Committee, July 23, 1985.

⁷See the Appendix for the details of this calculation.

A second approach was used to check the reasonableness of this figure. Forfeiting rates for those countries that banks will forfeit were estimated by econometric analysis. The results of the analysis were used to predict forfeiting rates for those countries without forfeiting rates. Nicaragua's estimated risk adjustment was 30.8 percent per year in 1981 and 43.6 percent per year in 1982.^{*} The second method indicates that the previous estimate of 17.1 percent is probably too low, but a lower bound on the subsidies is the goal of this analysis.

ESTIMATING CREDIT SUBSIDIES TO NICARAGUA

In order to calculate the level of export credit subsidies, it is not enough to know the terms that commercial lenders would require of a country; it is also necessary to know the terms of the official export credits. Little information is known about the precise terms of official export loans to Nicaragua, but much can be surmised. Data from a variety of sources reveal a great deal about these loans.

Some officially supported export credits to Nicaragua are direct government to government loans; others are private loans guaranteed by the exporter's government. Direct loans are subsidized directly and indirectly whereas guaranteed loans are subsidized only indirectly. Since December 1982, the Organization for Economic Cooperation and Development (OECD) and the Bank for International Settlements (BIS) have reported officially guaranteed bank loans and official export-related credits. The share of guaranteed loans in total export credits for Nicaragua is shown in Table 1.

Interest rates on officially supported export credits will be different for direct loans and for guarantees. Primarily under pressure from the United States, the OECD countries have in recent years been negotiating limits on the use of interest rate subsidies for export financing. The result of these negotiations has been a set of guidelines for officially supported export credits (Table 2). The guidelines on interest rates and repayment terms ("consensus rates")

^{*}Personal Communication from Daniel Kohler (work in progress).

Table 1

GUARANTEED SHARE OF OFFICIALLY
SUPPORTED CREDITS

| Date | Share of Officially Supported Credits Guaranteed |
|---------------|--|
| December 1982 | 25.8% |
| June 1983 | 33.3 |
| December 1983 | 32.1 |
| June 1984 | 45.2 |
| December 1984 | 24.8 |

SOURCE: OECD/BIS, *Statistics on External Indebtedness: Bank and Trade-Related Non-Bank External Claims on Individual Borrowing Countries and Territories*, various editions.

Table 2

OECD CONSENSUS RATES

(Finance charges in percent per year)

| | 4/1/78- 6/30/80 | | 7/1/80- 11/15/81 | | 11/16/81- 7/5/82 | | 7/6/82- 10/15/83 | | 10/16/83- Present | |
|---------------------|--------------------|------------|---------------------|------------|---------------------|------------|---------------------|------------|----------------------|------------|
| Country Category | 2-5 yrs. | >5 yrs. | 2-5 yrs. | >5 yrs. | 2-5 yrs. | >5 yrs. | 2-5 yrs. | >5 yrs. | 2-5 yrs. | >5 yrs. |
| I | 7.75 | 8.00 | 8.50 | 8.75 | 11.00 | 11.25 | 12.15 | 12.40 | 12.15 | 12.40 |
| II | 7.25 | 7.75 | 8.00 | 8.50 | 10.50 | 11.00 | 10.85 | 11.35 | 10.35 | 10.70 |
| III | 7.25 | 7.50 | 7.50 | 7.75 | 10.00 | 10.00 | 10.00 | 10.00 | 9.50 | 9.50 |

SOURCE: U.S. Treasury Department.

NOTE: Nicaragua is in Category III (fairly poor countries) and receives the lowest interest rates. Category I (fairly rich countries) and Category II (intermediate countries) pay higher rates.

form part of what is commonly called the OECD gentlemen's agreement, and they are periodically updated. The agreement is not binding on any member, but the rates are generally followed. Countries with lower government interest rates than the consensus rates are allowed to lend at their own rate. This analysis assumes that all direct loans are advanced at either the government borrowing rate or the consensus rate, whichever is lower. Guaranteed loans are usually advanced at the government borrowing rate because lenders generally consider these loans to be equivalent to any other government obligation. Of course, this rate varies from lender to lender, and subsidies are calculated separately for each lender. As an illustration, the rates that would be charged on loans advanced by the United States to a Category III borrower are shown in Table 3. The default risk surcharge is the spread over the risk-free rate that commercial lenders will demand to cover possible default.

The amount of new loans advanced to Nicaragua, their maturities, and balances outstanding were all derived from OECD data. Average and summary figures are shown in Table 4.

CALCULATING THE SUBSIDIES

When the amounts disbursed, interest rates, and maturities of official export credits are known, subsidies can be calculated using the method detailed in the Appendix. Briefly, a payment schedule for new disbursements is constructed from the interest rate and maturity data. This payment schedule is then evaluated (in fact discounted) using the commercial rate that would apply to the loan. The value of the promised repayments is then compared to the money advanced in the loan: any difference is a subsidy. This prospective subsidy estimate represents the subsidies embodied in loans granted during a year even though all the benefits do not occur during that year.

Also calculated is an annual subsidy estimate, the amount by which official export credits granted in past years reduce Nicaragua's debt servicing costs in the current year. This number shows the foreign exchange savings to Nicaragua from all previously granted subsidies.

Table 3

ILLUSTRATION OF ESTIMATED INTEREST RATES:
U.S. OFFICIALLY SUPPORTED CREDITS

(Finance charges in percent per year)

| Period | U.S. Government Borrowing Rate | Default Risk Surcharge | Estimated Commercial Rate | Consensus Rate | Direct Loan Rate | Guarantee Rate |
|---------|---|------------------------------|---------------------------------|-------------------|------------------------|-------------------|
| 1981 | 13.7 | 17.1 | 30.8 | 8.0 | 8.0 | 13.7 |
| 1982 I | 14.0 | 17.1 | 31.1 | 10.0 | 10.0 | 14.0 |
| 1982 II | 11.8 | 17.1 | 28.9 | 10.0 | 10.0 | 11.8 |
| 1983 I | 10.8 | 17.1 | 27.9 | 10.0 | 10.0 | 10.8 |
| 1983 II | 11.8 | 17.1 | 28.9 | 9.8 | 9.8 | 11.8 |
| 1984 I | 12.7 | 17.1 | 29.8 | 9.5 | 9.5 | 12.7 |

SOURCES:

Government borrowing rate: *International Financial Statistics*
Default risk surcharge: estimated
Estimated commercial rate: sum of government rate and risk surcharge
Consensus rate: derived from Table 2
Direct loan rate: minimum of consensus rates
Guarantee rate: government loan rate

Table 4
OFFICIALLY SUPPORTED LENDING
TO NICARAGUA

| Year | New Loans Advanced (millions) | Balances Outstanding (millions) | Estimated Term New Loans (years) |
|---------|--|---------------------------------------|---|
| 1981 | \$7 | \$135 | 7.0 |
| 1982 I | 6 | 119 | 7.7 |
| 1982 II | 42 | 170 | 10.8 |
| 1983 I | 20 | 163 | 9.0 |
| 1983 II | 9 | 159 | 9.4 |
| 1984 I | 18 | 119 | 6.6 |

SOURCE: OECD

NOTE: Data are not internally consistent. Many of the inconsistencies result from exchange rate changes and rounding.

It should be noted that annual subsidies are not determined by the current state of an economy. If loans to a country were advanced at 10 percent interest in 1978 when the market perception of risk was 15 percent, then the subsidy rate on these loans would be 5 percent. This subsidy rate will not change if economic conditions worsen so that a 20 percent rate would have been needed to cover risks or if economic improvements justify loans at a 12 percent rate. As an example, the annual subsidy for 1982 can be calculated by comparing repayments in 1982 to what those repayments would have been had the loan payments coming due in 1982 been made without subsidies. This computation requires examining the loans advanced in 1981, 1980, 1979, etc. The loans advanced in 1979 will benefit Nicaragua in 1980, 1981, 1982, and so on. Of all subsidies granted in 1979, only those subsidies that benefit Nicaragua in 1982 are included in the 1982 annual subsidy.

IV. SUBSIDIES TO NICARAGUA

Export credit subsidies save Nicaragua a considerable amount of money. Commercial loans to Nicaragua would probably require interest rates at least seventeen points above risk-free levels. Official export credits, however, are often advanced at below risk-free rates--the rates at which the lending government can borrow.

When talking about export credit subsidies, there is a timing problem. A subsidized loan advanced this year might save Nicaragua money for years to come. The subsidies in future years, however, are irrevocably contracted when the loan is advanced. One might reasonably follow either of two courses: attribute all future subsidies embodied in a loan to the year the loan is made, a prospective subsidy measure, or attribute the subsidies to the year in which the borrower actually saves on his financing costs, an annual subsidy measure. Prospective subsidies can be affected very quickly by policy decisions: stop subsidized lending. Annual subsidies can be reduced only as the subsidized loans outstanding are repaid. Subsidies by both measures are reported here.

Between January 1981 and June 1984, prospective subsidies to Nicaragua have totaled \$49.4 million. These subsidies are shown in Table 5 and Fig. 5. Also shown are subsidy figures if a low (3 percent) and a high (30 percent) risk surcharge are used rather than a 17.1 percent risk surcharge. If the lower risk estimate is used, subsidies would amount to \$26.7 million over the period. The high risk estimate produces subsidies of \$61.0 million. Payment prospects from Nicaragua look so poor that a even a risk premium of 30 percent might be too low. At worst, these loans might be considered grants with no expectation of repayment. If this assessment is accepted, then the entire value of the loans advanced, \$102 million, represent subsidies.

Annual subsidies are substantially higher. Export credit subsidies saved Nicaragua \$194.2 million from January 1981 through June 1984. These results are shown in Table 6 and Fig. 6. Also shown are debt service savings for the low (\$72.7 million) and high (\$305.4 million) risk surcharge.

The two methods of expressing subsidies differ for a number of reasons. First, new officially supported export credits to Nicaragua have declined in recent years relative to the balance outstanding on these credits. Second, prospective subsidies are limited mathematically to the amount of the new loans: at best, credit terms are so generous that the funds are provided free to Nicaragua.

Table 5
EXPORT CREDIT SUBSIDIES IN NEW LOANS
(Millions of dollars)

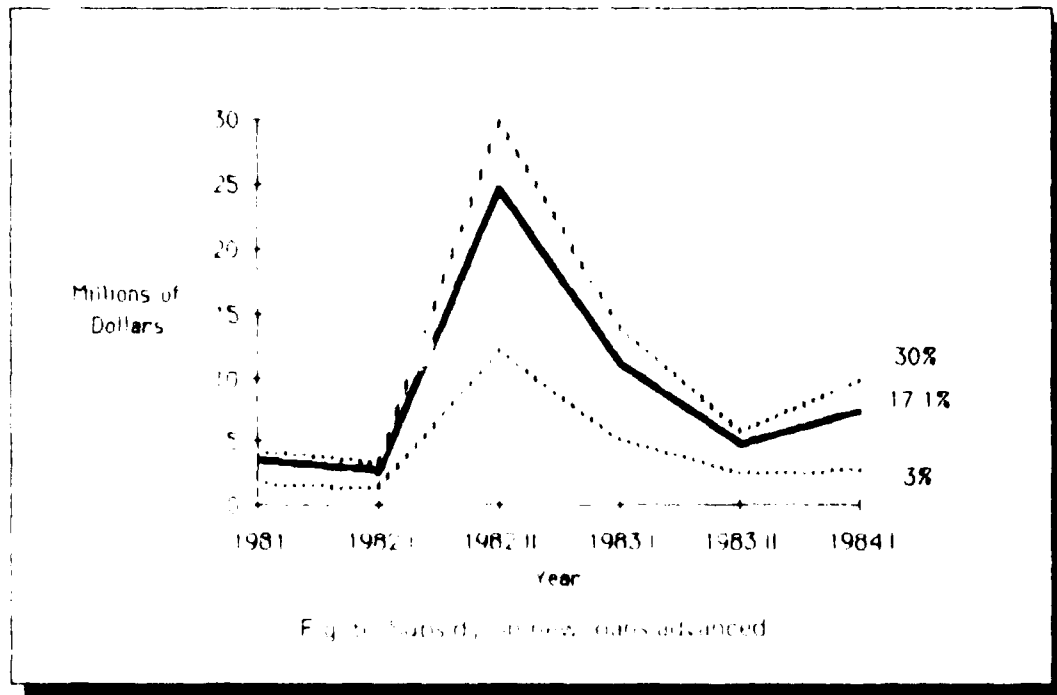
| Year | Risk Surcharge | | |
|---------|----------------|-------|-------|
| | 17.1% | 3% | 30% |
| 1981 | \$3.4 | \$2.0 | \$4.1 |
| 1982 I | 2.4 | 1.4 | 2.9 |
| 1982 II | 21.3 | 11.6 | 26.2 |
| 1983 I | 10.1 | 5.4 | 12.5 |
| 1983 II | 4.5 | 2.6 | 5.4 |
| 1984 I | 7.8 | 3.7 | 9.8 |
| Total | 49.4 | 26.7 | 61.0 |

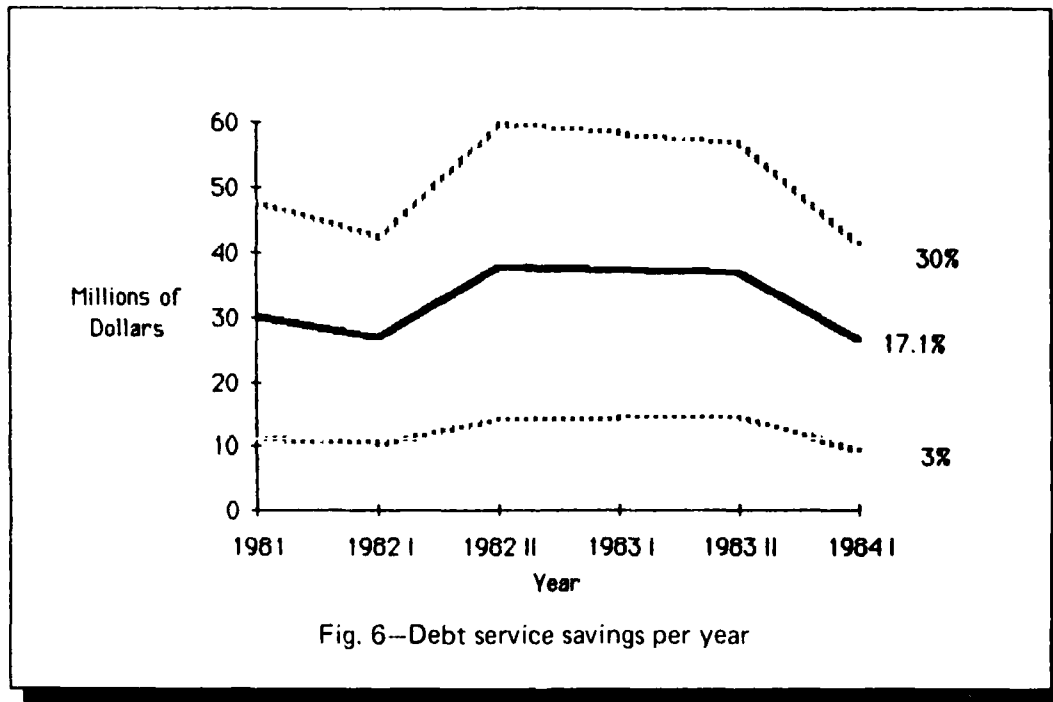
Table 6

INTEREST SAVED ON LOANS OUTSTANDING

(Millions of dollars)

| Year | Risk Surcharge | | |
|---------|----------------|--------|--------|
| | 17.1% | 3% | 30% |
| 1981 | \$30.1 | \$10.9 | \$47.6 |
| 1982 I | 26.8 | 10.1 | 42.0 |
| 1982 II | 37.7 | 13.9 | 59.5 |
| 1983 I | 37.2 | 14.2 | 58.2 |
| 1983 II | 36.5 | 14.3 | 56.9 |
| 1984 I | 25.9 | 9.3 | 41.2 |
| Total | 194.2 | 72.7 | 305.4 |





V. THE IMPORTANCE OF EXPORT CREDIT SUBSIDIES TO NICARAGUA

Subsidies on new export credits granted to Nicaragua since 1981 have totaled \$49.4 million. Nicaragua has saved \$194.2 million in interest payments over the same period because of the outstanding balances of official export loans. How important are these subsidies to Nicaragua?

When export credit subsidies are stacked up against Nicaragua's military buildup, they are neither monumental nor inconsequential. Nicaragua's arms imports from 1979 through 1983 total \$285 million.¹ The \$49.4 million in export credit subsidies from 1981 through June 1984 are 17.3 percent of this amount. Nicaragua's military spending from 1981 through 1983 was about \$690 million, and export credit subsidies amount to 7.2 percent of this total.² These subsidies are probably less than 1 percent of Nicaraguan GNP for the period. On the other hand, export credit subsidies exceed the amount of nonlethal assistance that the United States is giving anti-government forces in Nicaragua.

Official export credits are not the only type of subsidized lending that Nicaragua receives. In 1983, Nicaragua had \$2,335 million in outstanding loans from official creditors, more than half of which was drawn in 1981, 1982, and 1983. Of this amount, \$648 million was owed to multilateral institutions and \$1,687 was owed directly to individual foreign governments. The average interest rate on these loans is around 6 percent.³ Officially supported export credits thus accounted for less than 10 percent of bilateral loans, less than 7 percent of official loans. Furthermore, officially supported export loans were generally on

¹Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers*, 1985, Table II, page 117. ACDA does not vouch for the precision of these numbers, but they provide a rough approximation of arms imports.

²Ibid., Table I, page 75.

³World Bank, *World Debt Tables*, 1983-1984 edition, second supplement, pages 28-29.

stiffer terms than other official lending. If total subsidies on official loans to Nicaragua are just ten times as great as those in export credits alone, then official lending has substantially increased Nicaragua's ability to spend on its military endeavors.

Often, it appears, European governments are unwittingly subsidizing export credits or subsidizing credits to a greater extent than they realize. If European governments are alerted to the true costs of providing export credits to Nicaragua, they might reduce these flows, if not to further U.S. policy, perhaps because it is in their own economic interest to do so. The United States might thus find it advantageous to publicize the size of these subsidized flows.

Appendix CALCULATIONS

Calculating the Risk Surcharge

The Comptroller of the Currency requires U.S. Banks to set aside reserves equal to 75 percent of the value of their loans to Nicaragua.¹ Only a 50 percent probability of default is used. If a loan is made for five years with no interim payments, and the lender seeks an expected return of 15 percent, and the lender also expects a 50 percent probability of default, then he will charge an interest rate such that:

$$.5(1 + .15 + s)^5 = (1 + .15)^5,$$

$$\text{or, } s = (2(1 + .15)^5)^{1/5} - 1 - .15,$$

$$\text{or, } s = .171.$$

In other words, the lender will impose a surcharge of 17.1 percent per year on the loan to account for its risk.

Calculating the Subsidy Element of Official Export Credits

One provision of the OECD consensus agreement on official export credits is that the loan principal must be repaid in equal semi-annual installments. An approximation, equal annual installments, is used in this analysis. If a loan is advanced for L dollars at an interest rate of r for N years, each annual principal repayment will be L/N. Interest will be charged on the amount outstanding each year. Each of the payments can be regarded as a separate loan. Thus the repayment stream for the installment due in the jth year will be,

¹Testimony of H. Joseph Selby, Acting Comptroller of the Currency, before the U.S. Senate Banking Committee, July 23, 1985.

$$rL/N \text{ for } i < j$$

$$rL/N + L/N \text{ for } i = j.$$

Each of these repayments must be discounted by the risk adjusted interest rate, d . Thus the present discounted value of the loan repayments for such a loan will be:

$$PDV = \sum_{j=1}^N \left[\sum_{i=1}^j (rL/N)/(1+d)^i + (L/N)/(1+d)^j \right]$$

$$= (L/N) \left[Nr/d - r(1+d)^2(1/(1+d) - 1/(1+d)^N)/d^2 + 1/d - 1/(d(1+d)^{N-1}) \right].$$

The subsidy is the value of the loan less the value of the repayments:

$$\text{Subsidy} = L - PDV.$$

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